Restrictor for Air Cooling the LN_2 version of the MMI

Installation Guide

In addition to the cryogenic coolant, the MMI supports compressed air cooling on the LN_2 cooling option.

NOTE For most applications, leave the instrument configuration as **N2 cryo** even when using air as a coolant.

Requirements for compressed air cooling:

- The compressed air should be free of particulate material, oil, and other contaminants. These contaminants could clog the valve or affect the proper operation of the GC.
- Set the air supply pressure between 40 and 80 psig.
- Use 1/4-inch copper or stainless steel tubing for supply tubing to the LN_2 valve.

When using the LN_2 version at high supply pressures (typically >50 psig), a high frequency noise may be emitted from the instrument. To address this problem, a restrictor union G3510-27000 has been developed to reduce the emitted noise.

Installation

Tools needed:

- 9/16-inch wrench
- 1/2-inch wrench

The restrictor union is designed to attach to the inlet fitting for the LN_2 supply tube. Simply install this union on the 1/4-inch Swagelok-style fitting on the inlet tube and reconnect the compressed air supply. No other changes are required to use the restrictor union.

Figure 1 Restrictor installed on LN_2 supply line

Operation

The MMI has different control modes available for coolant operation. For the cryogenic modes (LN_2 or LCO_2), the inlet uses cryo depending on the **Cryo Use** temperature and the inlet temperature setpoint. Using these two setpoints, the system can either use cryo to cool the inlet and then turn off or continue to use cryo to maintain the setpoint.

The **Compressed Air** mode is different in that the coolant is used regardless of **Cryo Use** temperature during a cooling cycle. Once the inlet reaches the setpoint, the air coolant is turned off and stays off. If the oven temperature is high enough or the inlet was very hot previously, it is possible that the inlet temperature will rise and go not ready. The inlet then has to cool by less efficient means and can delay the start of the next analysis. For this reason, it is usually better to leave the instrument configuration as **N2 cryo** even when using air as a coolant.

Refer to the Agilent website (www.agilent.com) for the latest manuals.

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